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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,985	06/30/2000	Simon Robert Walmsley	PEC04US	9665

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SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN, 2041
AUSTRALIA

EXAMINER	
TRAN, DOUGLAS Q	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/607,985	WALMSLEY ET AL.	
	Examiner	Art Unit	
	Douglas Q. Tran	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

.DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because "(Figure 3)" appears on the bottom of the Abstract. "(Figure 3)" should be deleted from the Abstract. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Silverbrook et al. (US Patent No. 6,447,113 B1).

As to claim 1, Silverbrook teaches a print engine/controller (i.e., CCP 180 in fig. 18 or the back side master CCP 180M in fig. 30) configured to be coupled with others (i.e., 180S in fig. 30) to drive an ink drop printhead (143 in fig. 18) comprising:

an interface (194 in fig. 18 and col. 20, lines 55-56) at which to receive compressed page data (please see fig. 19: the receive page box and the compressed page buffer for storing the compressed page);

image decoders (the EDRL expander unit 188 and the JPEG decoder 196 in fig. 18) to decode compressed image planes (i.e., CMYK contone image data and bi-level image data from fig. 19) in the received compressed page data (col. 21, lines 1-7);

a half-toner/compositor (i.e., 190 in fig 18) to composite respective strips of the decoded image planes (col. 21, lines 8-12 and fig. 19 indicates that the composite bi-level data box for compositing bi-level data and halftone contone data); and

a printhead interface (192 in fig. 18) to output the composite strip to a print head (143 in fig. 18),

the printhead interface (192 in fig. 18) including:

a multi segment printhead interface (i.e., PHI 192 in fig. 39, col. 46, lines 12-16) outputting printhead formatted data (col. 21, lines 13-15); and

a synchronization signal generator (i.e. the line synchronization generator unit "LSGU" of the the printhead interface, col. 35, lines 17-18) outputting synchronization signal to couple print engine/controllers (i.e., both of CCPs in fig. 30) to synchronize their respective strips at the printhead (col. 35, lines 9-12).

As to claim 2, Silverbrook discloses every feature discussed in claim 1, and further teaches that the printhead interface accepts its own synchronization signal as a master controller to all print engine/controllers or that of another printhead controller as a slave (col. 35, lines 9-12).

As to claim 3, Silverbrook discloses every feature discussed in claim 2, and further teaches printhead interface includes an input at which a signal determines if the print engine controller is a master controller or a slave (col. 34, lines 43 and col. 35, lines 9-12).

As to claim 4, Silverbrook discloses every feature discussed in any one of claims 1 to 3, and further teaches the halftone/compositor scales input image plans under control of a margin unit set (i.e., clock enable generator generate margin for controlling the 190 in fig. 25) to establish print data for a strip of the image (col. 28, lines 11-35).

As to claim 5, Silverbrook discloses every feature discussed in claim 1, and further teaches with the addition of a tag encoder to calculate respective strips of a tag image plane (col. 29, lines 12-20).

As to claim 6, Silverbrook teaches a print engine/controller (i.e., CCP 180 in fig. 18 or the back side master CCP 180M in fig. 30) configured to be coupled with others (i.e., 180S in fig. 30) to drive an ink drop printhead (143 in fig. 18) comprising:

a contone image decoder (i.e., the JPEX decoder 196 in fig. 18) to decode any compressed continuous tone image planes in the received compressed page data (col. 21, lines 1-7, and please see box of decompress contone data "in fig. 19" for decompressing the JPEG image data "col. 7, lines 31-39);

a bi-level decoder (i.e., the EDRL expander 188 in fig. 18) to decode any compressed bi-level image plane (i.e., bi-level black text data) and /or dither data (i.e., graphic data in dot form, col. 7, lines 41-49 and 61-62) in the received compressed page data (col. 21, lines 1-7, and please see box of decompress bi-level data in fig. 19).

a half-toner/compositor (i.e., 190 in fig 18) to composite respective strips of the decoded image planes (col. 21, lines 8-12 and fig. 19 indicates that the composite bi-level data box for compositing bi-level data and halftone contone data)

including a **dot merger unit** (i.e., a multi threshold dither 290 in fig. 25) controlled by a **color mask (the color is registered from 288 in fig. 25) to effect integration of the image planes (i.e., 4 color plans) with what inks** are provided in the printhead (col. 35, lines 32-39 indicates that the printhead for printing by ink to produce bi-level dots in up to 4 colors and because the printing is bi level, the input image should be dithered. Col. 28, lines 11-28 describes that the half-toner/compositor 190 for generating the output which is set of 1600 dpi bi-level CMYK colors image lines. The half-toner/compositor 190 in Figure 25, includes a multi threshold dither 290, which is considered as a dot merger unit, for dithering the contone pixel value, this determines the value of the corresponding output dot "col. 29, lines 46-48") ; and

a printhead interface (192 in fig. 18) to output the composite strip to a print head (143 in fig. 18),

the printhead interface (192 in fig. 18) including:

a multi segment printhead interface (i.e., PHI 192 in fig. 39, col. 35, lines 44-46) outputting printhead formatted data (it is noted that the printhead formatted data, which would be considered as either low-speed or high-speed printing mode, is described from col. 35, line 62 to col. 36, line 10); and

a synchronization signal generator (i.e. the line synchronization generator unit "LSGU" of the the printhead interface, col. 35, lines 17-18) outputting synchronization signal to couple print engine/controllers (i.e., both of CCPs in fig. 30) to synchronize their respective strips at the printhead (col. 35, lines 9-12).

As to claim 7, Silverbrook discloses every feature discussed in claim 6, and further teaches the halftone/compositor includes a margin unit (i.e., clock enable generator generate margin for controlling the 190 in fig. 25) to apply margin data to the respective image planes during the composite process to generate print data in strips (col. 28, lines 11-35).

As to claim 8, Silverbrook discloses an inkdrop printer with a printhead drive by multiple print engine/controller comprising:

an interface (194 in fig. 18) at which to receive compressed page data (please see fig. 19: the box of compressed page buffer for storing the compressed page);

a hafltoner/compositer (190 in fig. 18) to composite **a strip** of the page data (Please see fig. 19: boxes of the halftone contone data and composite bi-level data to generate bi-level CMYK data for printing at the printhead);

a printhead interface to output **the composite strip to a segment of the printhead** (143 in fig. 30 and fig. 25);

one printhead interface generating a synchronization signal to synchronize the print engine/controllers to drive the printhead (col. 35, lines 9-12) at any one or more of higher speed (col. 36, line 3), **higher input resolution (col. 35, lines 35-36 describes that the higher input**

resolution is 1600 dpi), higher number of color planes (col. 35, lines 34-35 describes that four color plans is higher number of color plans is used to a printed page of a particular width), higher outlet resolution or wider format (col. 35, lines 40-41 indicates that the type of page-width format is used to this Memjet printhead and col. 45, lines 65-66).

As to claim 9, Silverbrook discloses every feature discussed in claim 8, and further teaches a printhead interface accepts its own synchronization signal as a master controller to all print engine/controllers or that of another printhead controller as a slave (col. 35, lines 9-12).

As to claim 10, Silverbrook discloses every feature discussed in claim 9, and further teaches the printhead interface includes an input at which a signal determines if the print engine controller is a master controller or a slave (col. 35, lines 9-12).

As to claim 11, Silverbrook disclose an inkdrop printer (178 in fig. 18)with a printhead (143 in fig. 18) driven by multiple print engine/controllers (i.e.,180M and 180S in fig. 30), the print engine/controllers including:

an interface (194 in fig. 18) at which to receive compressed page data (please see fig. 19: the box of compressed page buffer for storing the compressed page);

a contone image decoder (i.e., the JPEX decoder 196 in fig. 18) to decode any compressed continuous tone image planes in the received compressed page data (col. 21, lines 1-7, and please see box of decompress contone data "in fig. 19" for decompressing the JPEG image data "col. 7, lines 31-39);

a bi-level decoder (i.e., the EDRL expander 188 in fig. 18) to decode any compressed bi-level image plane (i.e., bi-level black text data) and /or dither data (i.e., graphic data in dot form, col. 7, lines 41-49 and 61-62) in the received compressed page data (col. 21, lines 1-7, and please see box of decompress bi-level data in fig. 19).

a halftoner/compositer (190 in fig. 18) to composite any bi-level image planes over any continuous tone image plane (col. 21, lines 8-12) wherein the page data in the image planes is scaled under control of a margin unit (i.e., clock enable generator 296 of fig. 25) to establish data for a strip (i.e., a line) of the image (col. 30, lines 31-33, 42-47 and table 24 in col. 30 indicates the clock enable generator 296 generates signals to establish the CMYK dot output as well as the margin for a line of image);

a printhead driver (i.e., a printhead interface 192 in fig. 18) to output the composited strips to a printhead (i.e., 143 in fig. 18, and col. 21, lines 13-15 and please see 286 in fig. 25); and a printhead receives strip from print data in parallel from the multiple engine/controller (the printhead 143 in fig. 30 for receiving the print data in parallel from 180M and 180S which controlled by line sync).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Q. Tran whose telephone number is (703) 305-4857 or E-mail address is Douglas.tran@uspto.gov.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Douglas Q. Tran
May. 22, 2004